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# LANDSCAPE ARCHITECTURE MAGAZINE

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SOCIETY OF LANDSCAPE ARCHITECTS



## DAVID HOCKER

On the right side of a Texas lake

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### A REMADE MILL RIVER

In Stamford, OLIN sets it free

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### THE NEW VIRTUAL REALITY

A fuller view—and less nausea

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### TREES AND FREEDOM

The planting of a civil-rights legacy





# CHANGE THE CHANNEL

**OLIN REDESIGNS THE MILL RIVER AS AN URBAN SANCTUARY  
IN STAMFORD, CONNECTICUT.**

BY WILLIAM S. SAUNDERS

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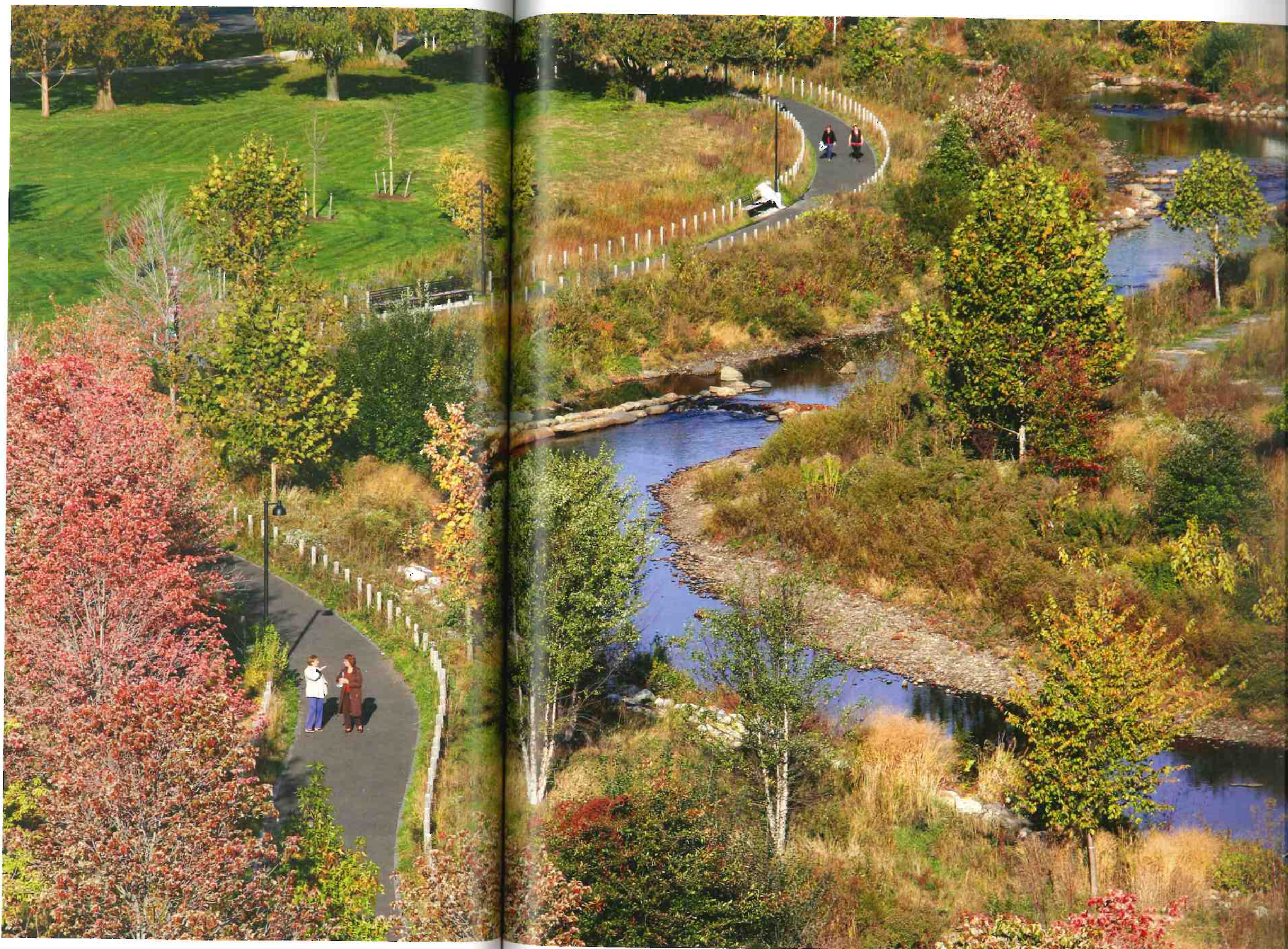
**RIGHT**  
Riparian plantings  
are chosen for  
their adaptability to  
the demands of an  
urban park.

“**H**OW MANY PEOPLE HAVE HAD THE CHANCE TO REBUILD AND DESIGN PART OF A RIVER?”

This from Lucinda Sanders, FASLA, the principal designer of OLIN's 28-acre Mill River Park in Stamford, Connecticut. “Very few. I certainly had not. Getting to do this in Stamford has been a remarkable opportunity.” The river in question is the Rippowam, which had been dammed since the 1600s and flowed through a concrete channel in Stamford since 1922. At the shore of the clean, rocky (bubbling!) river during my visit early last summer, I sometimes felt as though I could have been in Vermont—in places the stony river looked that natural. On either side, OLIN has created beautiful, thick, plant-rich meadows that also seem like they could be in Vermont—“less controlled and tidy than most OLIN work,” Sanders says. It's an artificial construction of ideal nature that you are happy to pretend is natural.

The park seems dreamlike as you raise your eyes above the river and meadow and see radically contrasting realities: a recent condominium high-rise (Trump Parc Stamford) and mirror-glassed corporate office ↘

© OLIN / SAHAR COSTON-HARDY





GREENWAY EXTENSION

MIDDLE CORRIDOR

MILL RIVER PARK



- 1 PLAYGROUND
- 2 GRAND STEPS
- 3 GREAT LAWN
- 4 EAST PROMENADE

WASHINGTON BOULEVARD

BROAD STREET

DOWNTOWN STAMFORD





**LEFT**  
Fifteen-foot flood walls were built in 1922, but the channelized river continued to overflow due to urbanization. Re-establishing the river's natural habit has mitigated much of the flood risk.

**BOTTOM**  
Restoration began with creating shallow banks after removing years of accumulated debris.

**OPPOSITE, TOP**  
The river flows high after the rain but doesn't threaten the nearby city.

→ towers; mid-rise hotel and residential buildings; and smaller, often run-down stores and other commercial buildings—an auto body shop, a Goodwill store, and the like. Nothing you see comes near the park in attractiveness.

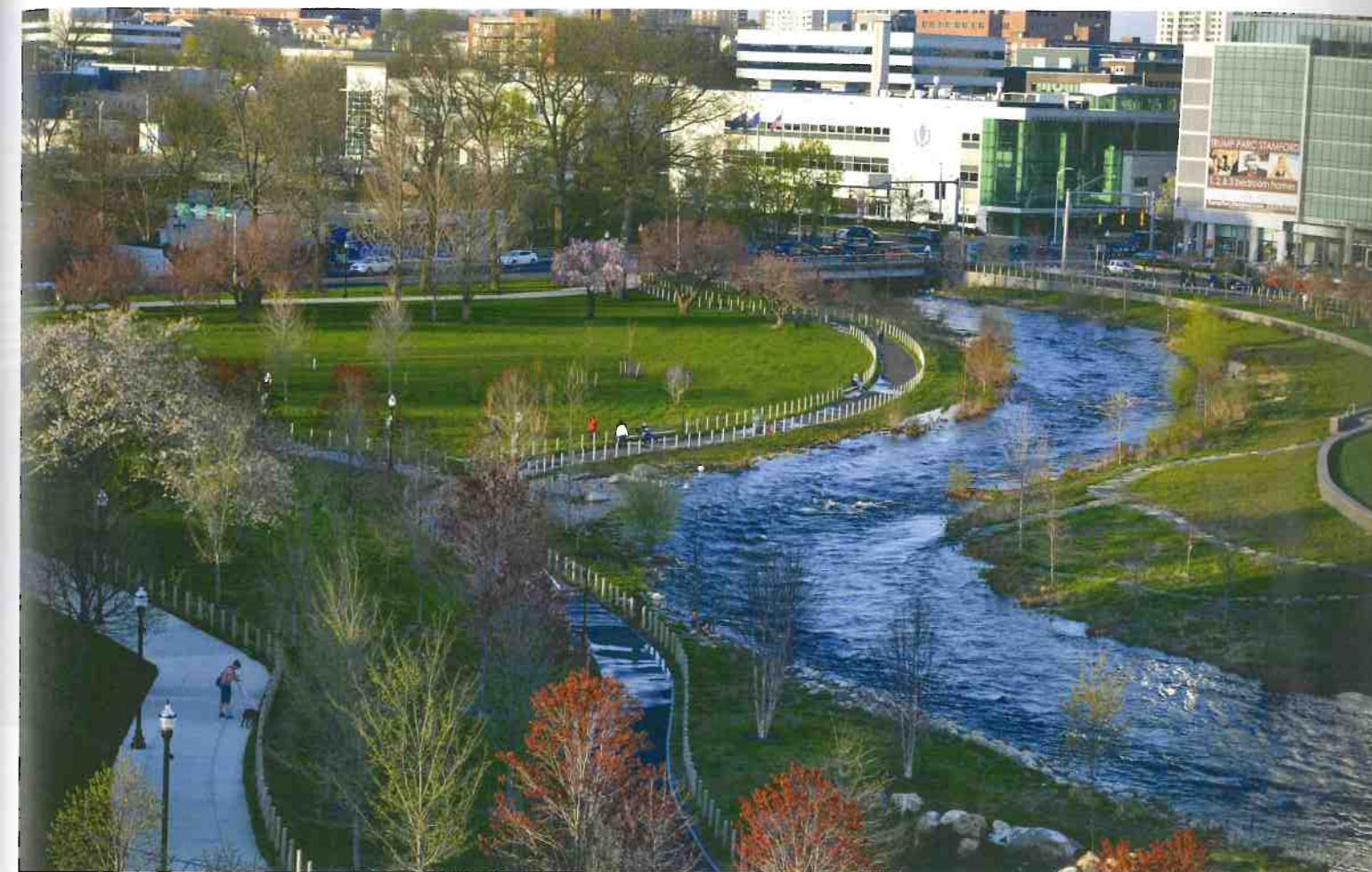
Since the early 20th century, the civic-minded of Stamford have wanted to grace the downtown with a river park. The Mill River Park Collaborative, a public/private nonprofit group with 500 members and a contract with the city, has taken charge, providing motivation, time, and money in oversee-

ing the park's design, construction, maintenance, and programming. The collaborative's members include many of the area's well-to-do, along with civic, government, and business entities. With the retired advertising executive Arthur Selkowitz as the board chair and Milton Puryear as the executive director, it has been extraordinarily successful at raising funds from individuals, foundations, and corporations.

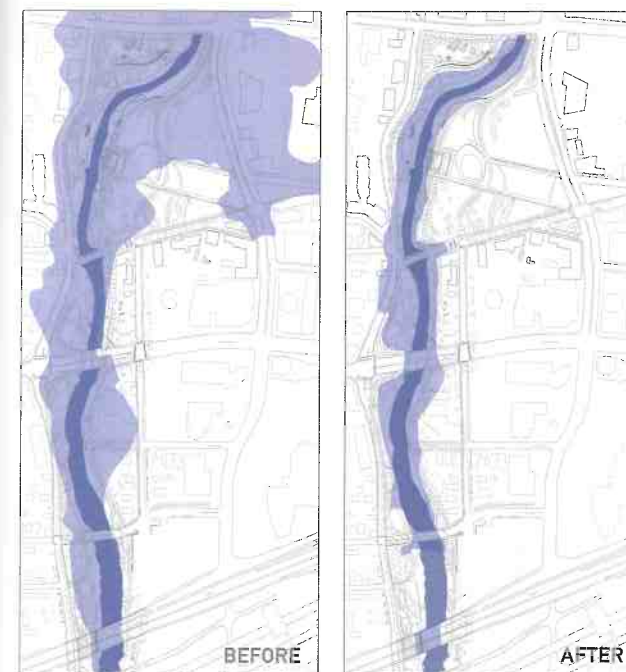
When channeled and dammed in two places, the pre-park river, full of silt and debris, occasionally flooded



© OLIN, TOP; COURTESY MILL RIVER PARK COLLABORATIVE, BOTTOM



## 100-YEAR FLOODPLAIN LIMITS



nearby streets—what was needed was an uncontained, debris-free river so floodwaters could flow onto the park's floodplain and more easily downstream. OLIN was brought in to create a master plan, adopted in 2007, for the downtown park as well as a future riverside greenway of parks and trails stretching a mile south to Long Island Sound.

The \$8 million river restoration, most of it federally funded, began in 2009 and was undertaken by the U.S. Army Corps of Engineers working with OLIN. The restoration used the “natural channel design” science of Dave Rosgen of Wildland Hydrology, which classified Mill River as one of 41 stream types and explained how to replicate that type's width, depth, gradient, stone sizes, and vegetation.

The first 13.5-acre, \$12 million phase of OLIN's design was completed, and the park opened in 2013, except for the installation (now under way) of a carousel and its pavilion (designed by Gray Organschi Architecture) and a fountain that becomes a winter ice-skating rink (funded by a local hedge fund manager, Steven A. Cohen, and his wife, Alexandra). In addition to its natural allure, the park, in design and administration, pulls people in for recreational, cultural, civic, and educational events. Sanders has found the extensive engagement of the collaborative's socially diverse volunteers “extremely endearing.” Nia Rhodes Jackson is the collaborative's programs and outreach director. She recalls that when the first part of the project, the assembling of its large, elaborately furnished playground, was





undertaken, “one and a half percent of the city’s population came out to volunteer.” As the park seasons, volunteers will continue to help maintain it and have been trained to remove invasive species.

The park and greenway, which won OLIN a 2015 ASLA Honor Award for General Design, has two quite different kinds of environments: large, open lawn areas for events and active recreation, and smaller, densely planted riverside areas for enjoyment of nature. If you start on the east side, close to the city center, you walk down the long East Promenade (or Cullman/Kirby Family Grand Allée—most major and hundreds of minor park elements are named after donors), lined by yellowwoods and paved in granite. You see just the gently sloped lawns, the largest now a fenced-in staging area for the fountain construction. You arrive at a big oval of grass (where the fountain will be) surrounded by a wider oval of dark gray crushed granite



**ABOVE**  
The former mill pond is now a river flanked by hydric, mesic, and urban upland plantings.

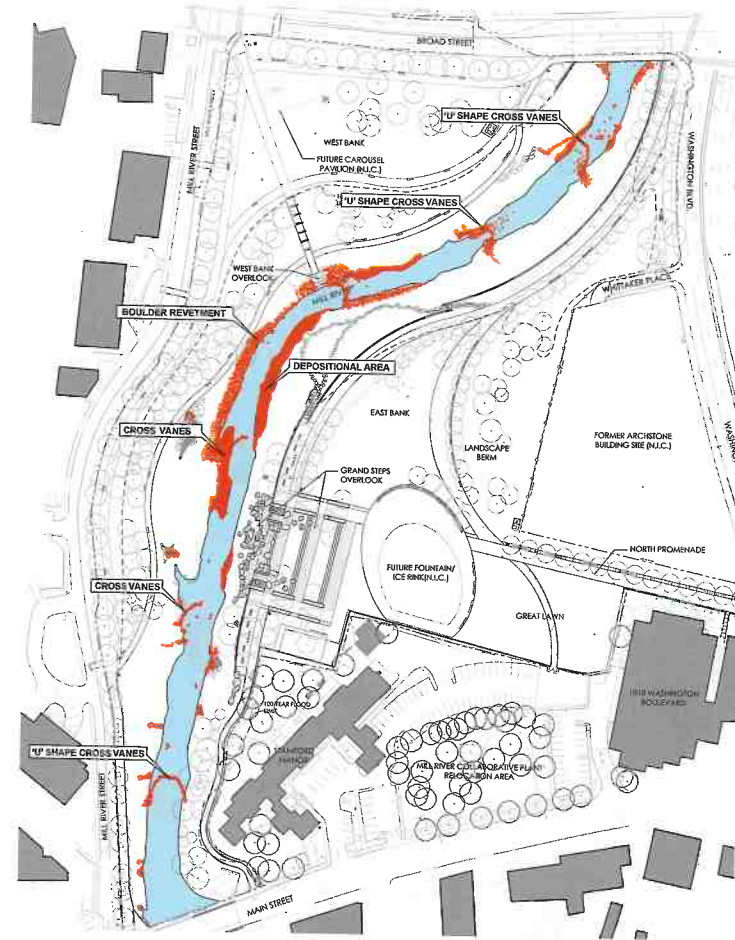
**LEFT**  
A promenade connects the park to downtown Stamford.

**BELOW**  
Boulders excavated from the site were used for seating and paving.



and, at the edge, a semicircle of lovely wood-slatted benches. Group activities like yoga classes and movie showings occur here, attracting a very diverse demographic. Without such activities and the elements yet to be built, the large lawns look rather blank and forlorn.

## CROSS VANE DIAGRAM



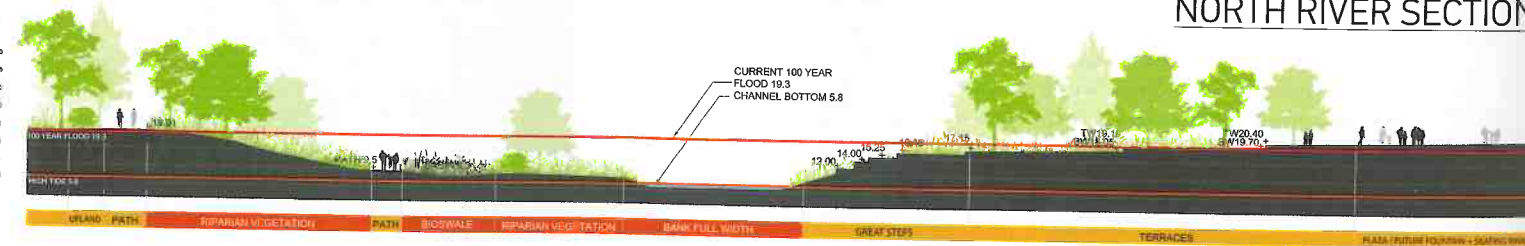
**BELOW**  
Riffles and pools replaced the dam and concrete channel.



Continuing straight, you come to the wide, granite and turf Grand Steps; these take you down to the river. Here other events and group activities are held. As you approach the water, you pass through a clever, deliberately gradual city-to-nature transition: Large natural boulders (brought from nearby construction sites) are cut to fit snugly on the granite steps; nearer the river, the boulders take over, offering more naturalistic places to sit (and watch sunsets). At the river is a small stony beach.

Although its riverbed stones were placed by designers, that bed looks, where it is meant to, as though it just happened. Sanders says it was “a real blast” to work with the scientists to design the riffles, pools, and meanders natural in rivers like this, often using V and J rock vane formations to control and direct the water. Fish have arrived from up- and downstream, even American eel and saltwater fish that spawn in freshwater marshes. The least natural river elements were needed to prevent riverbank erosion, although even in this case controlling structures

## NORTH RIVER SECTION







are made of vegetation—live stakes, layered branches, coconut fiber blankets planted in tight rows of speckled alder, and, in steeper areas, vegetated geogrids. The floodplain was so well designed that two hurricanes did not damage paths or alter grading.

There are two areas of direct access to the river. (In other areas, the riverside meadows are fenced off to protect them.) In both, people can and do get in the water—I saw little children crouching in shallow pools while women served a picnic and a man was fishing. You can walk along the pebbly shores beyond these access points. Consistently along the river, seemingly natural areas are bordered

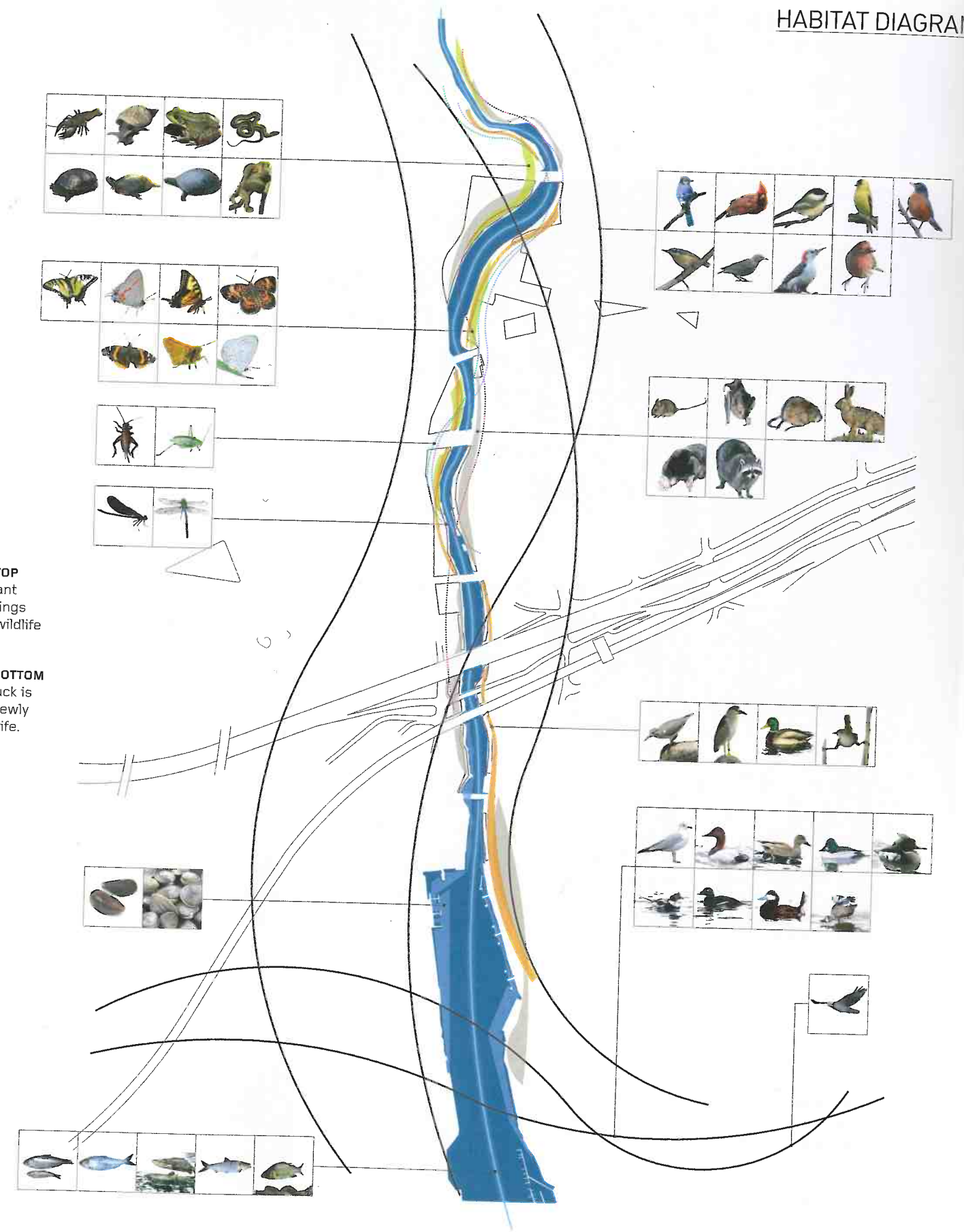
by less natural-looking elements that frame or allow comfortable appreciation of the “natural” snippets: For instance, rows of flat-topped boulders provide sitting opportunities for viewing the river and meadows. On the park’s northeast side is a long, charming path of uncut, unpolished stepping-stones (many carved with donor names) slowly leading through thick plantings to the river, where OLIN and Jeff Keller of Habitat by Design designed a low rock dam in the form of a V that creates a lovely, almost still pool.

The river is flanked higher up by the east and west river paths, for me the most wonderful parts of the



© OLIN / JEFF KELLER, HABITAT BY DESIGN

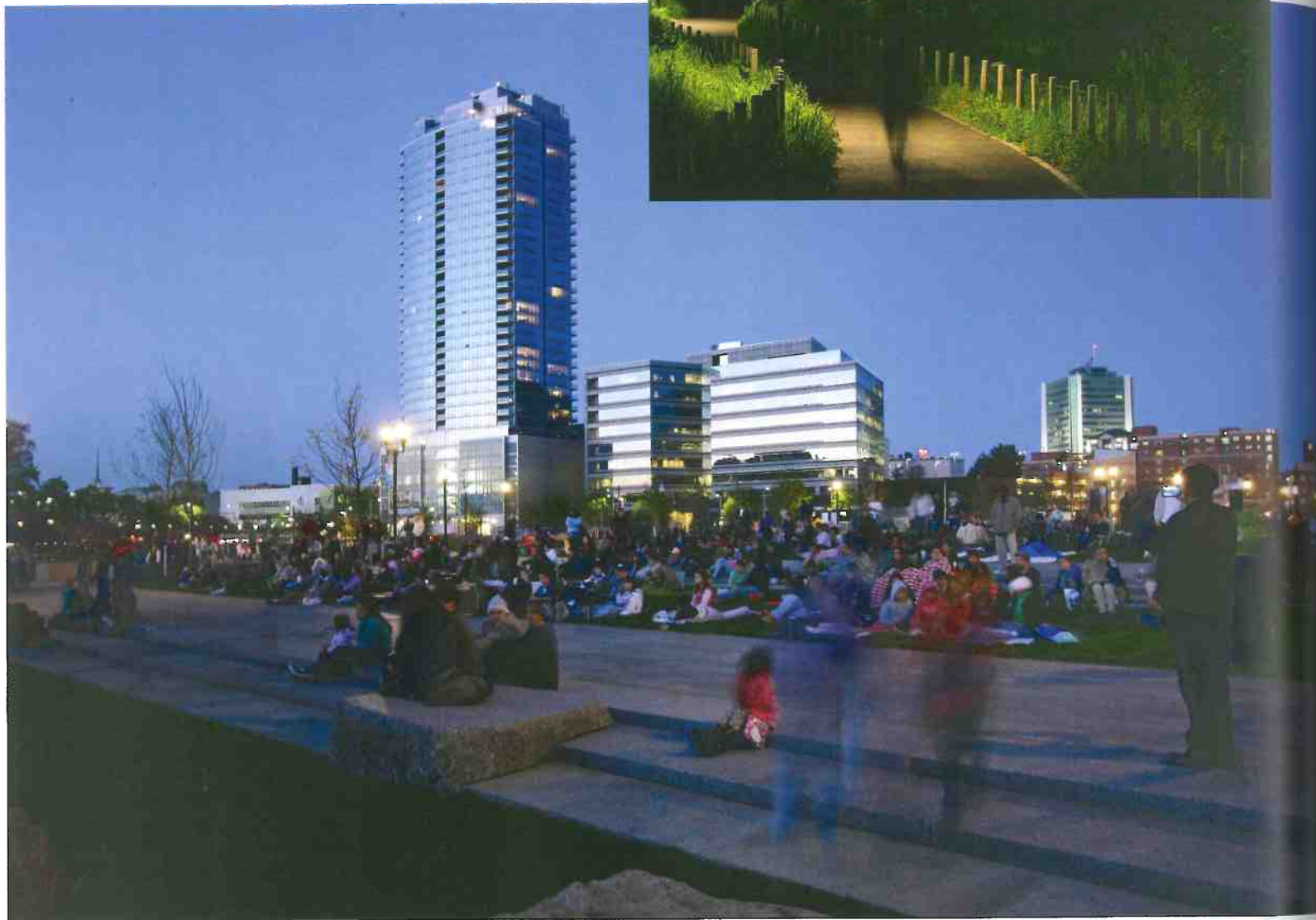
HABITAT DIAGRAM



**OPPOSITE, TOP**  
Flood-tolerant native plantings encourage wildlife habitat.

**OPPOSITE, BOTTOM**  
A mallard duck is among the newly arrived wildlife.





**ABOVE AND BELOW**

Paved paths run parallel to the river; informal stone walkways lead from the paths directly to the riverbanks.



**ABOVE**  
Steps along the Great Lawn provide ample room for events.

**INSET**  
Path lighting encourages safe passage through the park at night.

© OLIN / SAHAR COSTON-HARTY, TOP; SAHAR COSTON-HARTY, BOTTOM

park. The west river path is sheer delight because of how extensively it is surrounded by dense, diverse, habitat-rich grass, flowers, shrubs, and trees. The air was full of bird-song during my visit. Here and elsewhere in the park, a minimalist row of lovely wood posts linked by two almost invisible wires protects the meadows from foot traffic.

OLIN's Judy Venonsky, ASLA, who directed the planting strategy, wrote in an e-mail, "In the case of restoring Mill River to allow it to function as it once did, it took a nuanced understanding of how plant choices could revitalize aquatic and terrestrial habitats, reduce flooding, weather storm events, and create a beautiful and accessible landscape for humans

all at the same time." The banks were hydroseeded with 10 grasses and 32 native wildflowers, then overseeded with certain flowers for color groupings. The textures and colors of plant bunches are played off those of other nearby clusters. The park's meadows, sloping toward the river and shaded by maples, are mowed just once in the fall (some park users think they grow too tall and should be mowed more often). Even with trained volunteers weeding, invasive plants appear; however "native" they are, they have to be removed so they don't push out all else. The corps, promoting "the natural," wanted OLIN to leave in poison ivy and invasive Norway maples—OLIN fought them off.

Along the river are river birch and sycamore trees, which can tolerate

flooding and help fish to thrive with their shade. Keller from Habitat by Design helped plan planting, water depths, and edge conditions that would support a plentiful diversity of fauna. (Even river otters have been spotted.) In the more formal, manicured urban uplands, tidier nonnative plants are used in beds. Walkways along and near streets are lined with oaks and elms at every opportunity, including the large city streets of Main Street and Washington Boulevard, creating a more classicist aesthetic. On the western edge along the street, lindens were added to preexisting lindens to create a closely packed row—above the playground this row appears in a continuous flower and shrub bed. The local community treasured those off site, replanting them in a



## PLANT LIST

### FLOODPLAIN RIPARIAN

*Betula nigra* (River birch)  
*Platanus occidentalis* (American sycamore)  
*Quercus bicolor* (Swamp white oak)

### MESIC RIPARIAN

*Acer rubrum* (Red maple)  
*Acer saccharinum* (Silver maple)  
*Carpinus caroliniana* (American hornbeam)  
*Carya ovata* (Shagbark hickory)  
*Cornus alternifolia* (Alternateleaf dogwood)  
*Fraxinus pennsylvanica* (Green ash)  
*Hamamelis vernalis* (Ozark witch hazel)  
*Nyssa sylvatica* (Black gum)  
*Ostrya virginiana* (Hop hornbeam)

### URBAN

*Cercis canadensis* (Eastern redbud)  
*Cladrastis kentukea* (Kentucky yellowwood)  
*Prunus serrulata* 'Kwanzan'  
 (Kwanzan Japanese flowering cherry)  
*Prunus subhirtella* 'Autumnalis'  
 (Autumn winter-flowering cherry)  
*Prunus x yedoensis* (Yoshino cherry)  
*Quercus rubra* (Northern red oak)  
*Quercus stellata* (Post oak)  
*Tilia americana* (American basswood)  
*Ulmus americana* (American elm)

### SHRUBS

*Aronia melanocarpa* (Black chokeberry)  
*Cornus sericea* (Red osier dogwood)  
*Salix discolor* (Pussy willow)  
*Itea virginica* (Virginia sweet spire)  
*Amelanchier arborea* (Common serviceberry)  
*Amelanchier canadensis* (Canadian serviceberry)  
*Clethra alnifolia* (Coastal sweet pepperbush)  
*Cornus racemosa* (Gray dogwood)  
*Ilex verticillata* (Common winterberry)  
*Physocarpus opulifolius* (Common ninebark)  
*Spiraea tomentosa* (Steeplebush)  
*Hypericum prolificum* (Shrubby St.-John's-wort)  
*Symphoricarpos orbiculatus* (Coralberry)  
*Viburnum prunifolium* (Black haw)  
*Viburnum opulus* var. *americanum*  
 (American cranberry bush)

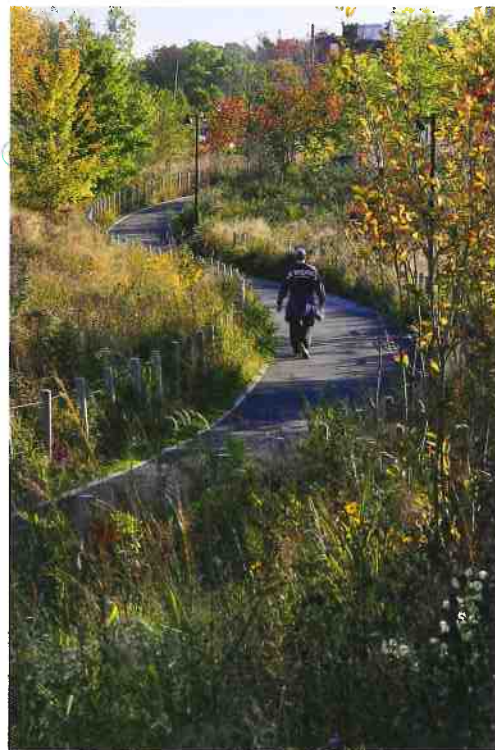
### FLOODPLAIN GRASSES

*Agrostis scabra* (Rough bent grass)  
*Bromus latiglumis* (Earlyleaf brome)  
*Carex gracillima* (Graceful sedge)  
*Carex scoparia* (Broom sedge)  
*Carex vulpinoidea* (Fox sedge)  
*Dichanthelium clandestinum* (Deertongue)

*Elymus canadensis* (Canada wild rye)  
*Elymus riparius* (Riverbank wild rye)  
*Elymus virginicus* (Virginia wild rye)  
*Festuca rubra* ssp. *fallax* (Chewing's fescue)  
*Panicum virgatum* (Switchgrass)  
*Schizachyrium scoparium* (Little bluestem)

### FLOODPLAIN PERENNIAL WILDFLOWERS

*Asclepias incarnata* (Swamp milkweed)  
*Asclepias syriaca* (Common milkweed)  
*Baptisia australis* (Blue wild indigo)  
*Bidens frondosa* (Devil's beggartick)  
*Chamaecrista fasciculata* (Partridge pea)  
*Coreopsis tinctoria* (Golden tickseed)  
*Doellingeria umbellata* var. *umbellata*  
 (Parasol whitetop)  
*Eupatorium perfoliatum* (Common boneset)  
*Euthamia graminifolia* (Flat-top goldenrod)  
*Eutrochium fistulosum* (Trumpetweed)  
*Eutrochium maculatum* (Spotted joe-pye weed)  
*Helianthus angustifolius* (Swamp sunflower)  
*Helianthus giganteus* (Giant sunflower)  
*Heliopsis helianthoides* (Smooth oxeye)  
*Hypericum ascyron* (Great St.-John's-wort)  
*Liatris spicata* (Dense blazing star)



*Lobelia cardinalis* (Cardinal flower)  
*Monarda fistulosa* (Wild bergamot)  
*Rudbeckia hirta* (Black-eyed Susan)  
*Rudbeckia laciniata* (Cutleaf coneflower)  
*Rudbeckia subtomentosa* (Sweet coneflower)  
*Senna hebecarpa* (American senna)  
*Silphium trifoliatum* (Whorled rosinweed)  
*Solidago rugosa* (Wrinkleleaf goldenrod)  
*Symphotrichum lanceolatum* ssp. *lanceolatum*  
 var. *lanceolatum* (White panicle aster)  
*Symphotrichum novae-angliae* (New England aster)  
*Tradescantia ohimensis* (Bluejacket)  
*Verbena hastata* (Swamp verbena)  
*Verbesina alternifolia* (Wingstem)  
*Vernonia noveboracensis* (New York ironweed)

### MESIC GRASSES

*Bouteloua curtipendula* (Side oats grama)  
*Bouteloua gracilis* (Blue grama)  
*Dichanthelium clandestinum* (Deertongue)  
*Festuca rubra* ssp. *fallax* (Chewing's fescue)  
*Koeleria macrantha* (Prairie June grass)  
*Schizachyrium scoparium* (Little bluestem)  
*Sporobolus heterolepis* (Prairie dropseed)

### MESIC PERENNIAL WILDFLOWERS

*Aquilegia canadensis* (Red columbine)  
*Asclepias tuberosa* (Butterfly milkweed)  
*Baptisia australis* (Blue wild indigo)  
*Castilleja coccinea* (Scarlet Indian paintbrush)  
*Chamaecrista fasciculata* (Partridge pea)  
*Conoclinium coelestinum* (Blue mistflower)  
*Coreopsis lanceolata* (Lanceleaf tickseed)  
*Echinacea purpurea* (Eastern purple coneflower)  
*Gaillardia aristata* (Blanketflower)  
*Helianthus mollis* (Ashy sunflower)  
*Liatris spicata* (Dense blazing star)  
*Lupinus perennis* (Sundial lupine)  
*Oenothera speciosa* (Pinkladies)  
*Penstemon digitalis* (Foxglove beardtongue)  
*Phlox pilosa* (Downy phlox)  
*Ratibida pinnata* (Pinnate prairie coneflower)  
*Rudbeckia fulgida* (Orange coneflower)  
*Rudbeckia hirta* (Black-eyed Susan)  
*Rudbeckia subtomentosa* (Sweet coneflower)  
*Senna marilandica* (Maryland senna)  
*Solidago speciosa* (Showy goldenrod)  
*Symphotrichum concolor* (Eastern silver aster)  
*Symphotrichum ericoides* var. *ericoides*  
 (White heath aster)  
*Symphotrichum laeve* var. *laeve* (Smooth blue aster)  
*Symphotrichum lateriflorum* var. *lateriflorum*  
 (Calico aster)  
*Tradescantia ohimensis* (Bluejacket)



**TOP**  
 Boulders placed along the banks provide spots for sunning.

**BOTTOM**  
 The park's summer planting entices the local population.

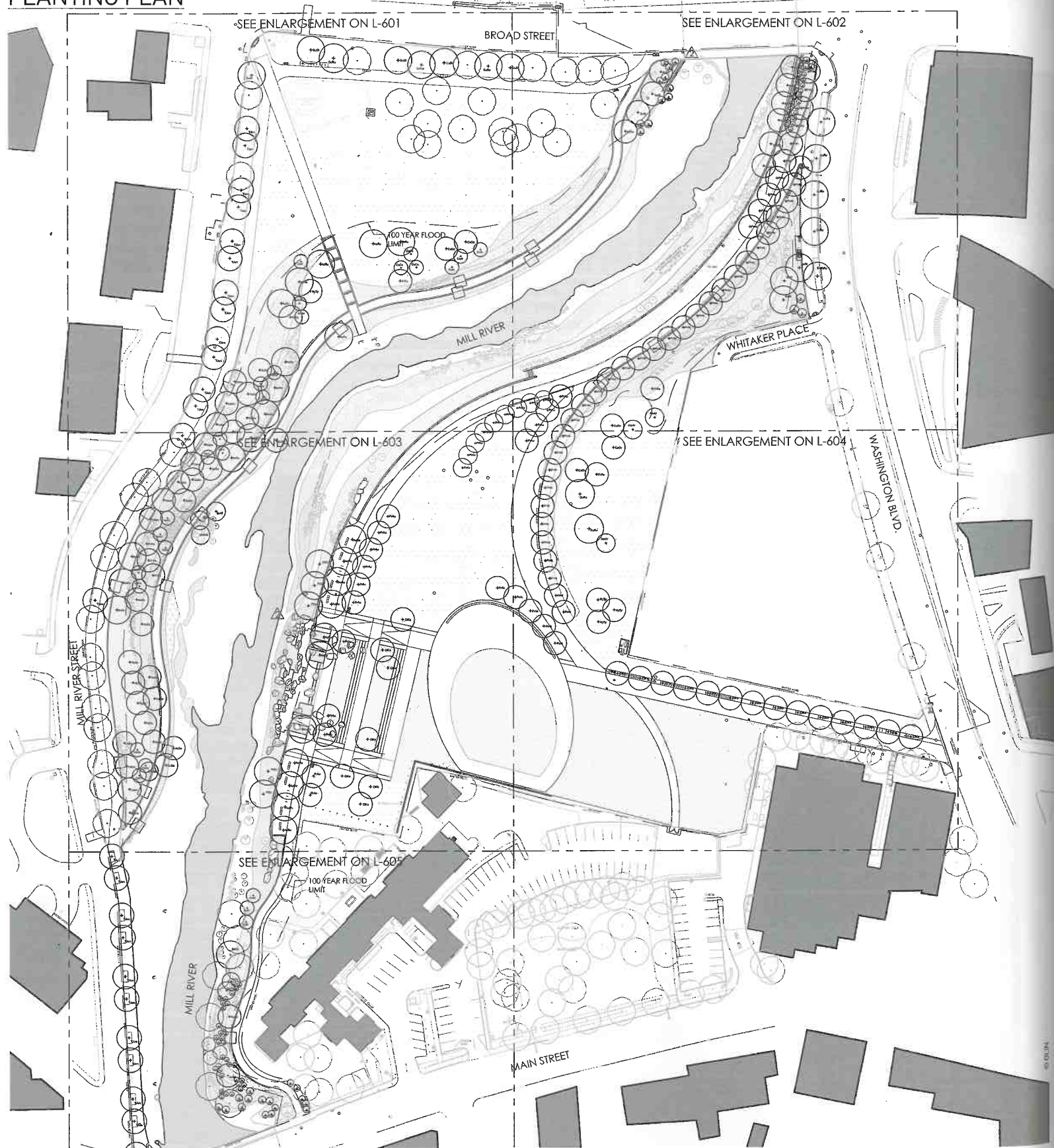
grove that the collaborative touts as the largest in New England, adding new cherries along the Great Lawn.

Mill River Park, now offering primarily a lovely experience of the river and of plant-rich meadows, has a long way to go: Added will be a kayak area, a "sensory garden," an expanded sculpture garden, an amphitheater, a rain garden, a dog run, and an artistic display of lights on the underside of

the I-95 highway. "Once the fountain/ice skating area came into focus," said the collaborative's Puryear, "the need for another building was clear": the Whittingham Discovery Center, which will provide facilities in this area where large groups can gather for events and programs. It will have a café, restrooms, maintenance space, classrooms for environmental education, and revenue-producing rental space.



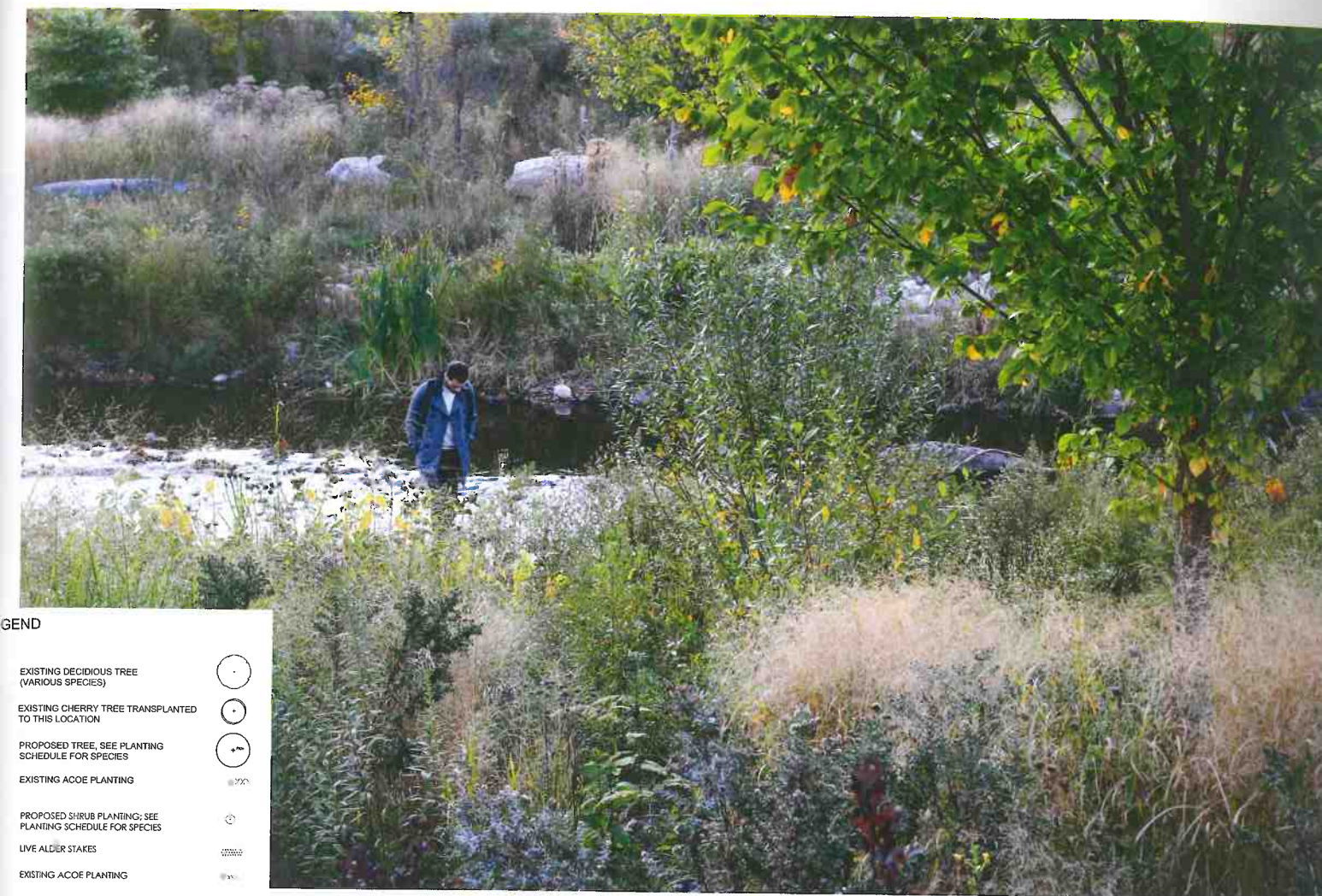
PLANTING PLAN



LEGEND

- EXISTING DECIDUOUS TREE (VARIOUS SPECIES)
- EXISTING CHERRY TREE TRANSPLANTED TO THIS LOCATION
- PROPOSED TREE, SEE PLANTING SCHEDULE FOR SPECIES
- EXISTING ACOE PLANTING
- PROPOSED SHRUB PLANTING; SEE PLANTING SCHEDULE FOR SPECIES
- LIVE ALDIER STAKES
- EXISTING ACOE PLANTING
- HYDROSEEDING
  - FLOODPLAIN
  - UPLAND
- OVERSEEDING
  - FLOODPLAIN MIX DRIFT
  - FLOODPLAIN FLOWER DRIFT
  - FLOODPLAIN GRASS DRIFT
  - MESIC DRIFT "A"
  - MESIC DRIFT "B"
  - WETLAND OVERSEEDING "A"
  - WETLAND OVERSEEDING "B"
  - WETLAND OVERSEEDING "C"
- PLANTER PERENNIALS
  - MESIC MIX
- TURFGRASS
  - SOD
  - SEED MIX
- ORNAMENTAL GRASS
  - Malva caerulea*
  - Schizachyium scoparium 'Blaze'*
  - Carex divisa*
  - Sesleria autumnalis*
- WETLAND PLANTS
  - Scirpus validus*
  - Iris louisiana* and *I. ensata*

© OLIVIER HOFFMANN, TOP; © OLIVIER HOFFMANN, BOTTOM



**TOP**  
Several years in, the native floodplain plantings are well established.

**LEFT**  
Though not native to the area, small dragons have been spotted along the river embankments.



**RIGHT**  
The river's improved ecology and inviting design prove irresistible for park visitors.

→ Many of the most challenging and engaging landscape architecture projects of our time, Sanders says, "result from cities' having infrastructural projects that must entail not only good engineering but also good design." Mill River Park is a prime example, and, especially with its gorgeous idealizations of nature, its design is better than good. Unsurprisingly, little disappointments appear: Support structures poke through the ground; a drinking fountain doesn't work; most street light fixtures are nostalgically traditionalist. But get yourself on the stepping-stone path to the river, surrounded by delicate grasses and flowers both comfortably familiar (Queen Anne's lace) and less usual but more brilliant (red cardinal flowers), and you will feel how precious OLIN's sanctuary is for this, in all truth, ragtag city. ●

WILLIAM S. SAUNDERS IS THE BOOK REVIEW EDITOR OF *LAM*, AUTHOR OR EDITOR OF SEVERAL BOOKS, AND FORMER FOUNDING EDITOR OF *HARVARD DESIGN MAGAZINE*.

**Project Credits**

**LEAD DESIGNER/LANDSCAPE ARCHITECT** OLIN, PHILADELPHIA. **CLIENT** MILL RIVER PARK COLLABORATIVE, STAMFORD, CONNECTICUT. **OWNER** CITY OF STAMFORD, STAMFORD, CONNECTICUT. **ECOLOGIST** HABITAT BY DESIGN, PIPERSVILLE, PENNSYLVANIA. **CIVIL ENGINEER** NITSCH ENGINEERING, BOSTON. **STRUCTURAL ENGINEER** FAY, SPOFFORD & THORNDIKE, BURLINGTON, MASSACHUSETTS. **GEOTECHNICAL ENGINEER** GZA GEOENVIRONMENTAL, INC., PROVIDENCE, RHODE ISLAND. **LIGHTING DESIGNER** TILLET LIGHTING DESIGN ASSOCIATES, NEW YORK. **IRRIGATION DESIGNER** NORTHERN DESIGNS, NORTH HAVEN, CONNECTICUT. **COST ESTIMATOR** BECKER & FRONDORF, PHILADELPHIA. **SOILS CONSULTANT** CLC LABS, WESTERVILLE, OHIO. **MAINTENANCE AND OPERATIONS** ETM ASSOCIATES, LLC, HIGHLAND PARK, NEW JERSEY. **ECONOMIC CONSULTING** ECONOMIC RESEARCH ASSOCIATES. **1998 MILL RIVER CORRIDOR PLAN** SASAKI ASSOCIATES, WATERTOWN, MASSACHUSETTS. **DAM REMOVAL, ENVIRONMENTAL REMEDIATION** U.S. ARMY CORPS OF ENGINEERS. **CONSTRUCTION ADMINISTRATION** STANTEC CONSULTING SERVICES INC., NEW YORK.

